

8 to the i th access terminal;
9 and
10 PS_i = the physical layer packet
11 size corresponding to a
12 maximum data transmission
13 rate for the i th access
14 terminal.

1 5. The method of claim 2, wherein the access point
2 calculates the scheduling parameter for each of the forward
3 communication links and access terminals as a function of the
4 frame utilization, a maximum data transmission rate, and an
5 average data transmission rate for the corresponding forward
6 communication link and access terminal.

1 6. The method of claim 5, wherein the frame utilization
2 is calculated as a function of a size of a data payload available
3 to send to the corresponding access terminal and a size of the
4 physical layer packet for the corresponding access terminal.

1 7. The method of claim 5, wherein the access point
2 calculates the frame utilization U_{FRAMEi} for the i th forward
3 communication link and access terminal using the following
4 expression:

5
$$U_{FRAMEi} = DPA_i / PS_i;$$

6 wherein DPA_i = the size of the data
7 payload available to send
8 to the i th access terminal;
9 and
10 PS_i = the physical layer packet
11 size corresponding to a
12 maximum data transmission
13 rate for the i th access
14 terminal.

14 R_{AVGi} = the average data transmission
15 rate for the i th forward
16 communication link for the i th
17 corresponding i th access
18 terminal for a predetermined
19 time period; and
20 U_{FRAMEi} = the frame utilization for the i th
21 forward communication link for the
22 corresponding i th access terminal.

1 12. The method of claim 11, wherein the access point
2 calculates the frame utilization U_{FRAMEi} for the i th forward
3 communication link and access terminal using the following
4 expression:

5
$$U_{FRAMEi} = DPA_i / PS_i;$$

6 wherein DPA_i = the size of the data
7 payload available to send
8 to the i th access terminal;
9 and
10 PS_i = the physical layer packet
11 size corresponding to R_{MAXi} .

1 13. A communications network, comprising:
2 a plurality of access terminals; and
3 an access point operably coupled to the access terminals by
4 a plurality of corresponding forward communication
5 links;
6 wherein the access point is adapted to calculate a
7 scheduling parameter for each of the forward
8 communication links and access terminals as a function
9 of a plurality of operating parameters; and

1 wherein the access point is adapted to schedule data for
2 transmission to the access terminal having the largest
3 scheduling parameter.

1 14. The communications network of claim 13, wherein the
2 access point is adapted to calculate the scheduling parameter for
3 each of the forward communication links and access terminals as a
4 function of a frame utilization for the corresponding forward
5 communication link and access terminal.

1 15. The communications network of claim 14, wherein the
2 frame utilization is calculated as a function of a size of a data
3 payload available to send to the corresponding access terminal
4 and a size of the physical layer packet for the corresponding
5 access terminal.

1 16. The communications network of claim 14, wherein the
2 access point is adapted to calculate the frame utilization $U_{\text{FRAME}i}$
3 for the i th forward communication link and access terminal using
4 the following expression:

$$U_{FRAMEi} = DPA_i / PS_i;$$

6 wherein DPA_i = the size of the data
7 payload available to send
8 to the i th access terminal;
9 and
10 PS_i = the physical layer packet
11 size corresponding to a
12 maximum data transmission
13 rate for the i th access
14 terminal.

1 17. The communications network of claim 14, wherein the
2 access point is adapted to calculate the scheduling parameter for
3 each of the forward communication links and access terminals as a

4 function of the frame utilization, a maximum data transmission
5 rate, and an average data transmission rate for the corresponding
6 forward communication link and access terminal.

1 18. The communications network of claim 17, wherein the
2 frame utilization is calculated as a function of a size of a data
3 payload available to send to the corresponding access terminal
4 and a size of the physical layer packet for the corresponding
5 access terminal.

1 19. The communications network of claim 17, wherein the
2 access point is adapted to calculate the frame utilization U_{FRAMEi}
3 for the i th forward communication link and access terminal using
4 the following expression:

5
$$U_{FRAMEi} = DPA_i / PS_i;$$

6 wherein DPA_i = the size of the data
7 payload available to send
8 to the i th access terminal;
9 and
10 PS_i = the physical layer packet
11 size corresponding to a
12 maximum data transmission
13 rate for the i th access
14 terminal.

1 20. The communications network of claim 13, wherein the
2 access point is adapted to calculate the scheduling parameter for
3 each of the forward communication links and access terminals as a
4 function of one or more weighting factors, a maximum data
5 transmission rate, and an average data transmission rate for the
6 corresponding forward communication link and access terminal.

1 21. The communications network of claim 20, wherein the
2 weighting factors are selected from the group consisting of:

3 a frame utilization for the corresponding forward
4 communication link and access terminal; and
5 a priority of the data to be transmitted to the
6 corresponding access terminal.

1 22. The communications network of claim 13, wherein the
2 access point is adapted to calculate the scheduling parameter for
3 each of the forward communication links and access terminals as a
4 function of a priority of the data to be sent to the
5 corresponding access terminal.

1 23. The communications network of claim 13, wherein the
2 access point is adapted to calculate a scheduling parameter P_i
3 for an i th access terminal and forward communication link using
4 the following expression:

$$P_i = (R_{MAXi} / R_{AVGi}) * U_{FRAMEi};$$

6 wherein P_i = the scheduling parameter for the
7 ith forward communication link
8 for the corresponding ith access
9 terminal;

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10            $R_{MAXi}$            =      the maximum data transmission
11                                     rate for the ith forward
12                                     communication link for the
13                                     corresponding ith access
14                                     terminal;

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21 $U_{\text{FRAME}i}$ = the frame utilization for the i th
22 forward communication link for the
23 corresponding i th access terminal.

1 24. The communications network of claim 23, wherein the
2 access point is adapted to calculate the frame utilization U_{FRAMEi}
3 for the i th forward communication link and access terminal using
4 the following expression:

$$U_{FRAMEi} = DPA_i / PS_i;$$

5
6 wherein DPA_i = the size of the data
7 payload available to send
8 to the i th access terminal;
9 and
10 PS_i = the physical layer packet
11 size corresponding to R_{MAX1} .

1 25. A computer program for scheduling the transmission of
2 data from an access point to a plurality of access terminals
3 serviced by the access point using the corresponding forward
4 communication links between the access point and the access
5 terminals in a CDMA/HDR communications network, comprising
6 instructions for:

7 the access point calculating a scheduling parameter for
8 each of the forward communication links and access
9 terminals as a function of a plurality of operating
10 parameters; and

11 the access point scheduling data for transmission to the
12 access terminal having the largest scheduling
13 parameter.

1 26. The computer program of claim 25, wherein the access
2 point calculates the scheduling parameter for each of the forward
3 communication links and access terminals as a function of a frame
4 utilization for the corresponding forward communication link and
5 access terminal.

1 27. The computer program of claim 26, wherein the frame
2 utilization is calculated as a function of a size of a data
3 payload available to send to the corresponding access terminal
4 and a size of the physical layer packet for the corresponding
5 access terminal.

1 28. The computer program of claim 26, wherein the access
2 point calculates the frame utilization U_{FRAMEi} for the i th forward
3 communication link and access terminal using the following
4 expression:

$$5 \quad U_{FRAMEi} = DPA_i / PS_i ;$$

6 wherein DPA_i = the size of the data
7 payload available to send
8 to the i th access terminal;
9 and
10 PS_i = the physical layer packet
11 size corresponding to a
12 maximum data transmission
13 rate for the i th access
14 terminal.

1 29. The computer program of claim 26, wherein the access
2 point calculates the scheduling parameter for each of the forward
3 communication links and access terminals as a function of the
4 frame utilization, a maximum data transmission rate, and an
5 average data transmission rate for the corresponding forward
6 communication link and access terminal.

1 30. The computer program of claim 29, wherein the frame
2 utilization is calculated as a function of a size of a data
3 payload available to send to the corresponding access terminal
4 and a size of the physical layer packet for the corresponding
5 access terminal.

31. The computer program of claim 29, wherein the access point calculates the frame utilization U_{FRAMEi} for the i th forward communication link and access terminal using the following expression:

$$U_{FRAMEi} = DPA_i / PS_i;$$

wherein DPA_i = the size of the data payload available to send to the i th access terminal; and

PS_i = the physical layer packet size corresponding to a maximum data transmission rate for the i th access terminal.

32. The computer program of claim 25, wherein the access point calculates the scheduling parameter for each of the forward communication links and access terminals as a function of one or more weighting factors, a maximum data transmission rate, and an average data transmission rate for the corresponding forward communication link and access terminal.

33. The computer program of claim 32, wherein the weighting factors are selected from the group consisting of:
a frame utilization for the corresponding forward communication link and access terminal; and
a priority of the data to be transmitted to the corresponding access terminal.

34. The computer program of claim 25, wherein the access point calculates the scheduling parameter for each of the forward communication links and access terminals as a function of a priority of the data to be sent to the corresponding access terminal.

1 35. The computer program of claim 25, wherein the access
2 point calculates a scheduling parameter P_i for an i th access
3 terminal and forward communication link using the following
4 expression:

$$P_i = (R_{MAXi} / R_{AVGi}) * U_{FRAMEi};$$

6 wherein P_i = the scheduling parameter for the
7 i th forward communication link
8 for the corresponding i th access
9 terminal;

10 R_{MAXi} = the maximum data transmission
11 rate for the i th forward
12 communication link for the
13 corresponding i th access
14 terminal;

15 R_{AVGi} = the average data transmission
16 rate for the i th forward
17 communication link for the i th
18 corresponding i th access
19 terminal for a predetermined
20 time period; and

21 U_{FRAMEi} = the frame utilization for the i th
22 forward communication link for the
23 corresponding i th access terminal.

1 36. The computer program of claim 35, wherein the access
2 point calculates the frame utilization U_{FRAMEi} for the i th forward
3 communication link and access terminal using the following
4 expression:

$$U_{FRAMEi} = DPA_i / PS_i;$$

6 wherein DPA_i = the size of the data
7 payload available to send
8 to the i th access terminal;
9 and

PS₁ = the physical layer packet size corresponding to R_{MAX1}.

1 37. A communications network, comprising:
2 a plurality of access terminals;
3 an access point operably coupled to the access terminals by
4 a plurality of corresponding forward communication
5 links;
6 means for calculating a scheduling parameter for each of
7 the forward communication links and access terminals
8 as a function of a plurality of operating parameters;
9 and
10 means for scheduling data for transmission to the access
11 terminal having the largest scheduling parameter.

1 38. The communications network of claim 37, further
2 comprising:
3 means for calculating the scheduling parameter for each of
4 the forward communication links and access terminals
5 as a function of a frame utilization for the
6 corresponding forward communication link and access
7 terminal.

1 39. The communications network of claim 38, further
2 comprising:
3 means for calculating the frame utilization as a function
4 of a size of a data payload available to send to the
5 corresponding access terminal and a size of the
6 physical layer packet for the corresponding access
7 terminal.

1 40. The communications network of claim 38, further
2 comprising:

3 means for calculating the frame utilization U_{FRAMEi} for the
4 ith forward communication link and access terminal
5 using the following expression:

$$6 \quad U_{FRAMEi} = DPA_i / PS_i;$$

7 wherein DPA_i = the size of the data
8 payload available to send
9 to the ith access terminal;
10 and
11 PS_i = the physical layer packet
12 size corresponding to a
13 maximum data transmission
14 rate for the ith access
15 terminal.

1 41. The communications network of claim 38, further
2 comprising: means for calculating the scheduling parameter
3 for each of the forward communication links
4 and access terminals as a function of the
5 frame utilization, a maximum data
6 transmission rate, and an average data
7 transmission rate for the corresponding
8 forward communication link and access
9 terminal.

1 42. The communications network of claim 41, further
2 comprising:
3 means for calculating the frame utilization as a function
4 of a size of a data payload available to send to the
5 corresponding access terminal and a size of the
6 physical layer packet for the corresponding access
7 terminal.

1 43. The communications network of claim 41, further
2 comprising:

3 means for calculating the frame utilization U_{FRAMEi} for the
4 ith forward communication link and access terminal
5 using the following expression:

6
$$U_{FRAMEi} = DPA_i / PS_i;$$

7 wherein DPA_i = the size of the data
8 payload available to send
9 to the ith access terminal;
10 and
11 PS_i = the physical layer packet
12 size corresponding to a
13 maximum data transmission
14 rate for the ith access
15 terminal.

1 44. The communications network of claim 37, further
2 comprising:

3 means for calculating the scheduling parameter for each of
4 the forward communication links and access terminals
5 as a function of one or more weighting factors, a
6 maximum data transmission rate, and an average data
7 transmission rate for the corresponding forward
8 communication link and access terminal.

1 45. The communications network of claim 44, wherein the
2 weighting factors are selected from the group consisting of:

3 a frame utilization for the corresponding forward
4 communication link and access terminal; and
5 a priority of the data to be transmitted to the
6 corresponding access terminal.

1 46. The communications network of claim 37, further
2 comprising:

3 means for calculating the scheduling parameter for each of
4 the forward communication links and access terminals

5 as a function of a priority of the data to be sent to
6 the corresponding access terminal.

1 47. The communications network of claim 37, further
2 comprising:
3 means for calculating a scheduling parameter P_i for an i th
4 access terminal and forward communication link using
5 the following expression:

$$6 \quad P_i = (R_{MAXi} / R_{AVGi}) * U_{FRAMEi};$$

7 wherein P_i = the scheduling parameter for the
8 i th forward communication link
9 for the corresponding i th access
10 terminal;

11 R_{MAXi} = the maximum data transmission
12 rate for the i th forward
13 communication link for the
14 corresponding i th access
15 terminal;

16 R_{AVGi} = the average data transmission
17 rate for the i th forward
18 communication link for the i th
19 corresponding i th access
20 terminal for a predetermined
21 time period; and

22 U_{FRAMEi} = the frame utilization for the i th
23 forward communication link for the
24 corresponding i th access terminal.

1 48. The communications network of claim 47, further
2 comprising:
3 means for calculating the frame utilization U_{FRAMEi} for the
4 i th forward communication link and access terminal
5 using the following expression:

$$6 \quad U_{FRAMEi} = DPA_i / PS_i;$$

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